

APPENDIX F - *Special Areas Report*

Within the Callahan Watershed are two specially designated areas which are under special management direction in the *Klamath National Forest Land and Resource Management Plan (Forest Plan)*. These are the proposed **Sugar Creek Research Natural Area (RNA)** and the **Duck Lakes Botanical Special Interest Area (SIA)**. Except for a small sliver of the Sugar Creek RNA, both areas are within the Russian Wilderness.

The unique value of these areas is the remarkable conifer species diversity they contain. The Sugar Creek and Duck Lake Creek drainages and mountains contain the richest assemblage of conifers in the world; 17 species within one square mile. This conifer diversity is the result of several factors. A number of species are believed to be relicts of the last glacial period, where they occur on Russian Peak (8,200 feet) and several ridgetop sites over 7,600 feet. The deep glacial valleys 2,000 feet below these sites create a wide range of elevations and associated climates and habitats. The areas tend to have many abrupt changes in habitat which allow many species not normally found together to occur close to each other. The diverse fire history and patterns in the Klamath Mountains contribute to plant diversity. In addition to conifer diversity, the vascular plant flora is generally quite rich, with nearly 400 species documented. The areas contain plant species more commonly associated with the adjacent Cascade Range, North Coast Range, and Great Basin communities.

Sugar Creek RNA - The *Forest Plan* designated this 3,200 acre drainage for management as part of the national system of Research Natural Areas. The designation has not yet been finalized at the Regional level, but the establishment record is expected to be completed in 1997. Proposed RNAs are to be managed as established RNAs, for the maintenance of unmodified conditions and natural ecological processes, per the *Forest Plan*. A primary management goal is to encourage use of the area for research. A site-specific RNA management plan has not been completed for the Sugar Creek RNA, but general management guidelines are found in the *Forest Plan*.

Duck Lake Botanical SIA - The *Forest Plan* designated this 3,600 acre area as a Special Interest Area to highlight for the public the unique values of the area. The unique ecological values of this SIA are managed under the *Forest Plan* and Forest Service manual to promote public use, education, interpre-

tation and enjoyment. A site-specific management plan has not been completed for this SIA.

CONIFER SPECIES

TRUE FIRS

Abies amabilis Pacific silver fir
*Abies concolor white fir
*Abies lasiocarpa subalpine fir
Abies magnifica red fir
*Abies magnifica var. shastensis Shasta red fir
Abies procera noble fir
Abies magnifica x procera red fir x noble fir
Abies concolor x grandis white fir x grand fir

CYPRESS FAMILY

*Calocedrus decurrens incense-cedar
Chamaecyparis lawsoniana Port-Orford-cedar
Chamaecyparis nootkatensis Alaska yellow cedar
Cupressus bakeri Baker cypress
*Juniperus communis common juniper
Juniperus occidentalis western juniper

SPRUCES

*Picea breweriana Brewer spruce
*Picea engelmannii Engelmann spruce

PINES

*Pinus albicaulis whitebark pine
Pinus attenuata knobcone pine
*Pinus balfouriana foxtail pine
*Pinus contorta lodgepole pine
*Pinus jeffreyi Jeffrey pine
*Pinus lambertiana sugar pine
*Pinus monticola western white pine
*Pinus ponderosa ponderosa pine
Pinus sabiniana digger/gray pine

DOUGLAS-FIR

*Pseudotsuga menziesii Douglas-fir

YEW

*Taxus brevifolia Pacific yew

HEMLOCK

*Tsuga mertensiana mountain hemlock

*Species within Duck Lake SIA and Sugar Creek RNA

SENSITIVE, AND SURVEY AND MANAGE PLANT SPECIES

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The following plant species of special concern are known to occur within the watershed. They are either

listed as Sensitive by the Regional Forester or as special Survey and Manage species under the *Northwest Forest Plan*. This information has been developed from rare plant surveys that have been conducted in the watershed at various times over the last decade, primarily in conjunction with previous management planning. These species are being managed to maintain species viability throughout their range. Specific management direction for each species varies by its designation (Sensitive, or Survey and Manage), proposed land management, and individual species habitat needs and ecological status.

Regional surveys for lichens, fungi, and mosses listed as Survey and Manage species have been started on the Scott River District, but have not been conducted within this watershed. These surveys will be started in the Callahan watershed in 1997. One species of rare fungus has been reported to occur in the watershed per the Regional Ecosystem Office data base in Portland. Other species of special concern may be located within the watershed upon further inventory of the area.

Allotropa virgata, sugar stick. SURVEY AND MANAGE.

Allotropa virgata is scattered but uncommon throughout the Pacific Northwest. It occurs in closed canopy stands from poles to mature and old-growth forests of Douglas-fir, true fir, and lodge pole pine. Its habitat is generally at higher elevations in dry, well-drained soils with abundant coarse woody debris and decaying wood (Appendix J2). This species has been documented from the Sugar Creek drainage within the Russian Wilderness, but other sites are likely to exist.

Allotropa may have limited reproduction as well as limited habitat, which could account for its relative rarity. The species is never abundant, and populations are often isolated from each other. This species is a non-photosynthesizing species which requires underground relationships with fungi, decaying logs, and other vascular plants for survival. (It may associate with matsutake mushrooms.) Seed production and dissemination may also be limiting factors for species survival. Depending on habitat and climatic conditions, plants may remain dormant underground for several years between flowering episodes. Seeds, when produced, are minute and have little energy reserves, requiring that they must fall in suitable habitat to germinate.

This species sometimes occurs on sites associated with recent fires, but the exact ecological relationship is unclear. Habitat factors and fire history of known sites should be analyzed to facilitate more specific identification of stand characteristics conducive for population establishment.

Surveys of projects to be implemented in 1999 or later are required by the *Northwest Forest Plan*. Until population ecology factors are better understood, prudent management would be to maintain canopy and soil conditions surrounding known populations. Mycorrhizal connections to host plants near the Allotropa is believed to be critical to maintaining viable populations.

Choiromyces alveolatus, rare truffle. SURVEY AND MANAGE.

This species is believed to be primarily associated with old-growth Abies forests at mid to high elevations. The species is infrequently found throughout Oregon and northern California, with one occurrence reported from Carter Meadows Summit. The species is an underground, mycorrhizal species that contributes to the diet of small mammals, who, in turn, contribute to the dispersal of the fungus. Pre-project surveys are not required for this species, but protection of known occurrences is required by the *Northwest Forest Plan*. Coarse woody debris is an important structural component of the species' habitat which should be maintained.

Cypripedium montanum, mountain lady's slipper. SURVEY AND MANAGE.

Cypripedium fasciculatum, clustered lady's slipper. SURVEY AND MANAGE.

These species generally inhabit shady sites within mature conifer forests. Habitat ranges from dry, rocky sites to moist seeps and streamsides on a variety of soil types and plant associations. Populations occur between 1,500 and 5,500 feet in elevation. These species are both well distributed across the western states, but are not common within their ranges. Several populations are known to exist in the French Creek and Sugar Creek drainages, on both private and National Forest lands.

Plants in this genus have a complex ecology in which they have underground fungal relationships with other plant species, and frequently obligate single-species insect pollinators. Populations of Cypripedium montanum tend to be very small with relatively few plants. These biological and ecological factors are believed to account for their rarity and are the limiting factors in their reproductive success.

The *Northwest Forest Plan* has identified these species as being associated with late successional forests. KNF data indicates that these species are frequently found in stands that have been thinned or selectively cut, or near roads or trails (Barker 1984). Other data suggests that populations in Oregon and Washington show decline when canopy removal and soil disturbance occur.

The ecological relationships of these species with fire is not clearly understood. Populations have been

noted thriving after low intensity fires, but other populations have been destroyed by medium or high intensity fires.

No history of grazing effects on these species has been documented on the Klamath.

The Forest developed a species management guide for these species in 1984, but it has been superseded by direction in the *Northwest Forest Plan*. Current direction is to protect all known populations, and to begin surveying for these species prior to all ground disturbing projects that will be implemented in 1999 or later. Components of existing structure and composition should be maintained in occupied Cypripedium habitat, where populations appear to be thriving. Underground fungal associations with other plant species are thought to be essential to these species survival and reproduction. These connections should be protected by limiting soil disturbance within populations. Low intensity fire may be beneficial to the species, but monitoring of sites following any fire will be important in developing a better understanding of the species' ecology, and subsequent management options.

Epilobium siskiyouense, Siskiyou fireweed. SENSITIVE.

This species inhabits rocky, open ultramafic slopes above 5,000 feet in Siskiyou and Trinity Counties and southern Oregon. There are 11 known populations on the Klamath, two of which are along the high ridge that forms the southeastern boundary of this watershed.

The high, rocky habitats that this species inhabits are not generally impacted by land management activities. However, any projects proposed in these areas will require surveys and protective management for the Epilobium.

Galium serpenticum ssp. scotticum, Scott Mountain bedstraw. SENSITIVE. The subspecies has an extremely limited distribution, and well-defined habitat. It inhabits south to west-facing, steep, talus slopes and sparsely vegetated outcrops of ultrabasic rock, from 5100 to 7600 feet elevation. Surrounding vegetation is mixed conifer forest of Jeffrey pine, incense-cedar, and Douglas-fir. The species is known only from the Scott Mountains in Siskiyou and Trinity Counties. There are 15 populations known on the Klamath NF, including four small locations within the South Fork of the Scott River drainage. Since the species' response to disturbance is undocumented, serpentine habitat should be surveyed prior to any ground-disturbing activities, and populations protected from disturbance. Although the habitat of this plant is generally not directly affected by timber harvest, road building associated with timber sales has affected populations in the past.

Ivesia pickeringii, Pickering's ivesia. SENSITIVE.

This species inhabits seasonally wet spots or dry edges of meadows on ultramafic soils. It is a Scott Mountains endemic found in mid-elevations within open mixed conifer forest. There are approximately 20 populations known, one of which is in the Callahan watershed.

This species has a long tap root from which it may sprout back after mild disturbance. It is suspected to be very sensitive to hydrological changes, therefore, an appropriate prescription is avoidance of the population, specifically avoiding soil compaction and disruption of the water regime within the species' habitat.

Perideridia leptocarpa, narrow-seeded yampa. SENSITIVE.

Narrow seeded yampa occurs from the Salmon Mountains of northern California to southern Oregon. 80 populations are known on Klamath National Forest. One population of the species is located on private land along the Scott River within the Callahan watershed. While no management of this population will occur, potential habitat on adjacent national forest lands will be required if ground disturbing management activities are proposed.

This species occurs on dry, open sites within mixed evergreen or ponderosa pine forests. It frequently occurs on serpentine soils and areas that have undergone natural disturbance such as fire. The effects of disturbance such as logging activities is less well documented, but has been favorable in some instances.

A Species Management Guide has been developed and signed by Klamath National Forest for management of Perideridia leptocarpa. It sets forth guidelines that protect a portion of the pupations and allow disturbance to others. Additional monitoring of the effects of timber harvest and grazing activities is needed.

Specific management direction for this species, if found, would include managing newly located populations through the EA process of proposed projects. Protection should be provided if the sites are considered to be biologically significant and protection is feasible. These populations will be monitored if the sites are impacted.

Phacelia greenei, Scott Valley phacelia. SENSITIVE.

This Siskiyou County endemic occurs in only 15 locations on Klamath National Forest, one of which is within the South Fork Scott River drainage. This species inhabits bare serpentine ridges and flats in

pine forests above 2,500 feet. Any such habitat within proposed project areas would require surveys and protective management. As this species is a rare local endemic, an appropriate prescription is avoidance of all occurrences.

Trillium ovatum ssp. oettingeri, Salmon Mountains wakerobin. SENSITIVE.

Salmon Mountains wakerobin is endemic to mixed conifer forests between 4,000 and 6,400 feet elevation in the southern Klamath and southern Cascade Provinces of Siskiyou, Trinity, and Shasta Counties. This subspecies shows two distinct distribution centers. The larger group is within the Marble, Scott, Trinity, and Salmon ranges. A smaller, secondary center is in eastern Siskiyou Counties on the northern and eastern bases of Mt. Shasta.

Throughout its range, the plant is found in moist, shady places near seeps, along streams, and on flats where snowmelt concentrates in spring; generally in heavily forested areas where white fir or red fir are present. Alder and yew are also common associates. Populations of this subspecies grow on soils of various parent materials, favoring northern exposures (Reed and Shapiro 1982). Over 100 populations are known from the Klamath National Forest, and the species is not uncommon in riparian habitats within this watershed. Populations occur along the major drainages within the Russian Wilderness, and at

several sites along the upper reaches of the South Fork of the Scott River.

In response to past management activities and monitoring, Salmon Mountains wakerobin has not responded well to canopy removal, soil disturbance, or alteration of watercourses in its habitat. Plants have not been found in places disturbed by past management activities, even if undisturbed areas nearby are inhabited by the plant. Plants may be quite long-lived, requiring up to ten years of underground development before ever blooming. Even when mature, the plants may remain underground without sending up leaves during years of drought.

Any projects proposed in riparian habitats within the watershed will require surveys for Trillium ovatum ssp. oettingeri. Protective management should be given to the plants and the habitat structure and composition that provides its shade and moisture conditions. The Species Management Guide developed for this species prescribes a maximum cumulative disturbance of no more than 25% of the plants within a compartment.

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